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Anaconda Aluminum Company
25 Broadway
New York 4, N. Y.

INSTRUCTIONS TO BIDDERS

Proposals, to be entitled to consideration, positively must be made in accordance with the following instructions:

Before submitting a proposal, bidders should carefully examine the drawings and specifications, visit the site of the work and fully inform themselves as to all existing conditions and limitations, the work to be performed by others, and such local conditions as housing, source of aggregates for concrete, arrangements for obtaining water and electrical power, winter weather as it might affect construction, highway and railway facilities, disposal of waste excavation if any, and the like.

Any bulletins issued during the time of bidding are to be covered in the proposal and in closing a contract they will become a part thereof.

The competency and responsibility of bidders will be considered in making the award. The Owner does not obligate himself to accept the lowest or any other bid.

Proposals shall be made upon the form provided therefor. All blank spaces in the form pertaining to the bid submitted shall be fully filled; numbers shall be stated both in writing and in figures; the signatures shall be in longhand; and the completed form shall be without interlineation, alteration or erasure. You are requested not to remove the proposal from the folder. Please leave attached and return the entire set after completing proposal on the form provided.

Proposals shall not contain any recapitulation of the work to be done. No oral, telegraphic or telephonic proposals of modifications shall be considered.

At the time of submitting the proposal, the bidder will attach thereto a list of the main equipment that he proposes to use together with a brief outline of the method of pouring that he proposes to employ.

The bidder will also submit a chart showing the organization of his field staff and where possible furnish names of same.

The bidder will also submit on a single sheet a complete excavation and concrete progress schedule showing the

following:

(a) Anticipated starting and completion dates for each building unit.
(b) Anticipated monthly concrete yardages poured for each building unit.
(c) Anticipated accumulated monthly concrete yardages poured for all the work.

The bidder will also state the number of hours per week he proposes to work in order to fulfill completion of the work within the time limits set forth in these documents.

The Contractor is to complete the overall work under this contract prior to June 30, 1954. Inasmuch as severe winter weather is not unlikely at the site and may preclude the performance of any gainful work, the Owner will require that certain work, as outlined in the Agreement, be completed prior to any shutdown because of weather. The Contractor's overall unit prices are to include all the Contractor's costs necessitated by such a shutdown, subsequent resumption of the work and completion of the work.

Without prejudice to any other right which the Owner might have in the event of the failure of the Contractor to perform by the stipulated time Owner may require that any work not performed by the above dates and as outlined in the Agreement must be performed by the Contractor without extra compensation.

The proposal is to be sealed in an opaque envelope marked "Proposal" bearing the title of the work and the name of the bidder.

Bids are to be delivered to the Owner's Chief Engineer addressed as noted below on or before April 27, 1953.

Proposals shall be addressed to the Owner, in care of Mr. Wilbur Jurden, Chief Engineer, Anaconda Aluminum Company, 25 Broadway, New York 4, New York.

PROPOSAL

Date: May 18, 1953

Bidder's name J. A. McNEIL COMPANY, INC.

Address 3115 WEST MISSION ROAD

City and State ALHAMBRA, CALIFORNIA

We hereby propose to do the work described in the Contract Documents for Excavation, Backfilling and Concrete, Aluminum Plant, Columbia Falls, Montana, (which documents include the Instructions to Bidders, this Proposal, the Agreement, the Specifications and Drawings) in accordance therewith.

All of the work is to be completed at the following prices:

(a) Overall unit price per cubic yard of concrete: THIRTY-SEVEN AND 66/100 Dollars ($ 37.66)

(b) Overall unit price per cubic yard of excavation: ONLY 80/100 Dollars ($ 0.80)

(c) Unit price per cubic yard of gravel in place: THREE AND 50/100 Dollars ($ 3.50) (for use at option of Owner around french drains, under floor slabs, etc.)

(d) The overall unit price per cubic yard of concrete shown above contains ONLY 15/100 Dollars ($ 0.15) for heating and cold weather protection of concrete as outlined in Section III, Article 7 of the Specifications.

(e) The overall unit prices per cubic yard of excavation and/or concrete are based upon costs which include an allowance of One Hundred Thousand Dollars ($100,000) for subsistence and/or travel allowance to Contractor's employees during the period of this contract, expendable only with the prior written consent of the Owner. If Contractor's actual cost for such subsistence and travel allowance is less than One Hundred Thousand Dollars, the difference between that amount and the amount of the Contractor's actual cost shall be deducted from any amounts due to the

Contractor on final settlement hereof. The Contractor shall notify the Owner promptly of all amounts expended by him for this purpose.

We estimate that completion of the work will require SEVENTY-FOUR THOUSAND (74,000) cubic yards of concrete and FOUR HUNDRED AND FIFTY-TWO THOUSAND (452,000) cubic yards of excavation.

Assuming the contract is awarded to us on or before May 18, 1953 we will start work on or before May 19, 1953 and we will complete the overall work on or before June 30, 1954. We also acknowledge that the Owner requires that certain work, as outlined in the Agreement, must be completed prior to August 15, 1953 and further that certain other work, as outlined in the Agreement, must be completed prior to December 30, 1953 or prior to an enforced shutdown due to weather, whichever occurs first.

If notified of acceptance of this offer, we agree to execute the Agreement for this work included in the Contract Documents on the above terms.

J. A. McNEIL COMPANY, INC.
Contractor

By _____

Title President

AGREEMENT

THIS AGREEMENT, made as of this 18th day of May, 1953 by and between ANACONDA ALUMINUM COMPANY, a Montana Corporation (hereinafter called the Owner) and

J. A. Mc NEIL COMPANY, INC.
(Name of Contractor)

a California Corporation (hereinafter
(Indicate whether a corporation, partnership, etc.)

called the Contractor);

W I T N E S S E T H:

In consideration of the premises and the mutual covenants and agreements contained herein, and for other good and valuable considerations, the parties hereto agree that:

1. The Contractor shall provide the materials and labor, perform the work, and do everything required by the Instructions to Bidders, Proposal, this Agreement, Specifications and Drawings for Excavation, Backfilling and Concrete, Aluminum Plant, Columbia Falls, Montana (such documents including all modifications thereof incorporated therein prior to the execution hereof, being herein called the Contract Documents), at the location specified and in accordance with the terms of the Contract Documents. The Contractor and the Owner have examined the Contract Documents, and whether or not attached hereto at the time of execution they are by reference made a part hereof, and form the contract between the parties.

2. The Contractor shall commence the work under this contract on or before May 19th, 1953 and shall complete the work as outlined hereunder:

A. The Contractor shall complete the work for the following units prior to August 15, 1953:

(a) General Office, Gate House and Garage
(b) Warehouse
(c) Maintenance Shop (equipment foundations and floor slab excepted)
(d) Laboratory (floor slab excepted)
(e) Change House

B. The Contractor shall complete the work for the following units prior to December 30, 1953 or prior to an enforced shutdown due to weather, whichever occurs first:

B. (Continued)

(a) Pot Line Building Foundations, including interior equipment foundations for pots.
(b) Electrical Distribution Tunnel extending transversely under Pot Line Building Basement Floor.
(c) Rectifier Substation Building.
(d) Electric Shop and Untanking Tower.
(e) Conveyor Tunnel extending longitudinally between Pot Line Building Foundations.

C. The Contractor shall complete all of the remaining work prior to June 30, 1954. The Contractor may perform any of this remaining work concurrently with the work outlined in paragraphs A and B above to the extent that the Owner is able to furnish working drawings for same provided that the performance of this work does not jeopardize completion of the work outlined in paragraphs A and B above.

It is expressly understood and agreed that time is of the essence of this contract.

3. In addition to the work prescribed in Section V of the Specifications attached hereto, the Contractor's work will include:

A. The unloading of cement from railroad cars at the plantsite and it will also include the transporting of cement to his storage facilities. Except for cement, the Owner will unload all materials furnished by the Owner. In the event the Owner desires to have the Contractor unload any of the Owner's materials or equipment, this will be negotiated by work order separate from this contract.

B. The installation of a storm drain below the pot line basement floor running parallel to and extending about the same length as the electrical distribution tunnel but not necessarily adjacent to same.

C. The placing of backfill in all outdoor areas to subgrade level prepared for receiving of paving and base course to be done by others.

4. The Owner agrees to pay the Contractor in current funds, in accordance with the terms of the Contract Documents:

(a) THIRTY-SEVEN AND 66/100 ---- Dollars ($ 37.66)
per cubic yard of concrete

(b) ONLY 80/100 ---------- Dollars ($ 0.80)
per cubic yard of excavation

(c) THREE AND 50/100 ---------- Dollars ($ 3.50)
per cubic yard of gravel for use at option of Owner around french drains, under floor slabs, etc.

5. The Contractor agrees, but without limiting any other provision of the Contract Documents, to indemnify and hold the Owner and its agents and employees harmless from all claims, liabilities, costs, expenses and damages of every description growing out of, or connected with, the performance of this contract by the Contractor, whether in the nature of injury to persons (including death) or damage to property or otherwise.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed the day and year first above written.

ANACONDA ALUMINUM COMPANY

By _____

CONTRACTOR

By _____

SECTION I

GENERAL

The Anaconda Aluminum Company, herein referred to for convenience as the Owner, is constructing an aluminum plant on its property located near Columbia Falls, Montana. The Owner is soliciting bids for that portion of the construction work entailing yard excavation, neat excavation, backfilling and reinforced concrete work. The construction firm or company, to whom this portion of the work is awarded, is herein referred to as the Contractor.

With reference to the General Plant Layout, it is to be noted here that the Owner requires early occupancy of the following shops and offices:

a. General Office and Garage
b. Warehouse
c. Maintenance Shop
d. Laboratory
e. Change House

The completion of the greater part of the work for these units under this contract is prerequisite to the performance of work under other contracts which the Owner has already and/or will let. It is therefore incumbent upon this Contractor to schedule the start of his work on these units and to a large degree carry the work of each unit through to completion concurrently with the work of the other units in this same category. The high priority affixed to the above units is not meant to prevent the Contractor from performing gainful work in other areas of the Plant.

SECTION II

BORINGS, EXCAVATION & BACKFILLING

1. Borings

Soil explorations have been conducted at the site by the firm of Dames & Moore. Information relating to logs of borings, ground water table level, etc. contained in their report is available from Mr. Wilbur Jurden, Chief Engineer, Anaconda Aluminum Company, 25 Broadway, New York 4, New York.

2. Excavation

Yard excavation shall be extended to the lines and levels as indicated on the drawing provided for that purpose.

Neat excavation shall be extended to the lines of the various foundations in a manner which will result in a minimum disturbance of adjacent earth or fill, and shall be adequately safeguarded against slides, using shoring and/or sheet piling if necessary. Excavation for all structures is to be done carefully to avoid over-excavation in depth, weakening of surrounding areas and bearing areas, and damage to any structure or parts that are completed or under construction. If satisfactory soils are not found at the intended depths, any excavation is to be deepened until the Owner's Engineer approves the lower materials and their suitability for his purpose.

3. Backfill

Material used for backfill will in general be provided by the excavation operations described above. This fill shall be placed in layers of 6 to 12 inches and each layer shall be compacted as approved. If necessary to insure adequate density, it shall be wetted during the tamping or rolling operation. The material shall be free from roots, brush or other objectionable material. Frozen material shall not be used. Backfilling is not to be done under bearing areas except as shown on the Drawings or as approved by the Owner's Engineer, and in such cases the backfill shall be compacted to obtain 90% of maximum density.

SECTION III

REINFORCED CONCRETE

In various paragraphs of these Specifications references are made to certain standard or tentative Specifications and Methods of the American Society for Testing Materials. These references are to be construed as relating to those Standards as amended to date and are hereinafter represented as ASTM Designation _____.

1. Quality of Materials & Cause for Rejection of Aggregates.

All cement shall be standard (not quick setting) gray Portland Cement and shall conform to ASTM Designation C150. Special cements shall be used only as ordered by the Owner's Engineer or as called for on the Drawings. Cement shall be kept thoroughly dry and stored in a water-tight structure and in sufficient quantity to insure an adequate supply at all times.

Water shall be clean, free from oil, acid, alkalies, and vegetable matter.

Cement tests shall be made upon request of the Owner.

It will be the Contractor's responsibility to furnish fine and coarse concrete aggregate of quality acceptable to the Owner. Throughout the concreting operations, the Owner will furnish testing and control services to establish the suitability of the aggregates going into the concrete mix. These tests will be in accordance with the A.S.T.M. standards. Tests of aggregate revealing harmful characteristics, in the opinion of the Owner, will be cause for the Owner to reject the initial or continued use of such aggregate.

2. Coarse Aggregate

Coarse Aggregate shall consist of siliceous, clean, hard, strong, durable gravel and/or crushed stone. It shall be free from injurious amounts of soft, friable, thin, elongated or laminated pieces, alkali, loam, organic and other deleterious matter, and shall be thoroughly washed and graded from coarse to fine within the following limits:

	1-1/2 inch size	3/4 inch size
Passing 2 inch sieve	100%	-
" 1-1/2 inch sieve	95% to 100%	100%
" 1 " "	55% to 75 %	95% to 100%
" 3/4 " "	35% to 55 %	60% to 80 %
" 3/8 " "	5% to 20 %	15% to 40 %
" No. 4 " "	0% to 5 %	0% to 5 %

Coarse Aggregate shall be stored in bins and stockpiles in the two above sizes. Coarse aggregate which is produced by combining two or more sizes shall be proportioned and mixed in a manner approved by the Owner's Engineer. Unless otherwise approved, all coarse aggregate shall come from one pit or quarry.

The three-quarter (3/4) inch size shall be used in slabs and in walls less than nine (9) inches thick, except as directed otherwise by the Owner's Engineer.

3. Fine Aggregate

Fine Aggregate shall be siliceous sand having hard, strong, durable particles, free from soft or flaky particles, clay, shale, loam, alkali, organic matter or other deleterious substances. Natural sand shall be washed. It shall contain not more than three per cent (3%) of silt by weight, as determined by decantation.

Sand shall be rjected if the colorimetric test for organic impurities produces a color darker than the standard.

Fine aggregate shall be well graded from coarse to fine and when tested by means of laboratory sieves shall conform to the following requirements:

	Per Cent by Weight
Passing No. 4 sieve	95 to 100
" No. 8 "	80 to 95
" No. 16 "	45 to 80
" No. 30 "	25 to 50
" No. 50 "	13 to 20
" No. 100 "	0 to 5

The sieves themselves and the methods of making the sieve analyses shall conform to the requirements specified in the Standard Method of Test for Sieve Analysis of Aggregates for Concrete ASTM Designation C136. Unless otherwise approved, all sand shall come from one pit.

The Standard Method of Test for Organic Impurities in Sands for Concrete, ASTM Designation C40, will be used to determine the presence of organic impurities in the sand. Samples will generally be taken at the source of production for complete laboratory analysis, which will be made promptly, and no material shall be used, except at the risk of the Contractor, until the results of such analysis are made known and approved by the Owner's Engineer.

4. Concrete Mix

Concrete shall consist of approved gray Portland Cement, approved air-entraining admixture, plastiment admixture, fine aggregate, coarse aggregate and water, mixed in proportions to produce an ultimate twenty-eight (28) day compressive strength of not less than 3,000 lbs. per square inch, using the "Water Cement Ratio" method in design and control of the strength of the concrete.

The proportions used in the mixing of the concrete shall be such that, in general, the quantity of the coarse aggregate shall be approximately twice the quantity of the fine aggregate. Every effort shall be made to secure a concrete of such mixture as will produce maximum density and minimum shrinkage during setting and at the same time a concrete which can be easily compacted and worked into close contact with the reinforcing, any embedded pieces or structures, and the forms.

Since the time for starting work under this Contract may not afford sufficient time to make the standard test usually required for concrete, in order to determine the proper proportioning of the ingredients of the concrete, the Contractor

shall advise the Owner's Engineer and secure approval of the mix to be used and the sources from which he proposes to obtain the cement and aggregates. He then shall submit to the Owner's Engineer, certified records of previous tests made on test cylinders consisting of similar cements and mixes of representative aggregates from these sources, proportioned for a minimum ultimate compressive strength of not less than 3,000 lbs. per square inch, and for which twenty-eight (28) day tests have proved the compressive strength to equal or to exceed this amount.

5. Concrete Cylinder Test

From time to time during the process of concreting, the Owner's Engineer will take samples from the concrete as it is mixed or placed and make them into test cylinders for seven (7) day tests. These cylinders will be made in accordance with the Standard Method of Making and Storing Compression Test Specimens of Concrete in the Field, ASTM Designation C31. The Contractor shall provide facilities for the proper care of these test cylinders until they are removed from the site, and in cold weather, shall supply sufficient heat to keep the test specimens at a temperature of between sixty (60) and seventy-five (75) degrees F. Should these tests reveal sufficient change in the properties of the resulting concrete to justify modification in the grading of the aggregates or should they reveal a concrete of less strength than is desired, the Owner's Engineer will order such modification in the mixture as will produce the desired results. Seven-day compression tests should yield seventy (70) per cent of the required ultimate strength at twenty-eight (28) days.

6. Mixing Concrete

The Owner's Engineer will approve the amount of cement, admixture, aggregate and water to be used in each batch, making due allowance for the amount of water held in the aggregate, and thereafter, except as the Owner's Engineer may direct, these quantities shall be maintained. Should a greater workability be required, it shall be obtained by methods approved by the Owner's Engineer; increasing the amount of water will not be permitted.

Prior to the start of the Work, the Contractor shall secure approval by the Owner's Engineer of the Plant he proposes to use. This shall include aggregate-weighing equipment and water-measuring tank, each to function within an error of one per cent (1%). Unless otherwise approved, mixer shall be of a batch type with a peripheral speed of about two hundred (200) feet per minute, and shall be provided with a counting and a timing device.

Each batch shall be mixed not less than one and one-half (1-1/2) minutes after the introduction of all materials. Contents of drum are always to be completely discharged before recharging. Waterproofed cement shall be mixed for two (2) minutes.

Transit-mixed concrete may be used subject to approval by the Owner's Engineer. It shall conform with all provisions for concrete that apply herein and with ASTM Serial Designation C94. Upon delivery to the job, the Contractor shall receive from the manufacturer of the transit-mixed concrete, a certificate in duplicate stating the quantity of each delivery, its proportion and designed ultimate strength. The Contractor shall retain one (1) copy for his record and file the other with the Owner's Engineer.

7. Depositing Concrete

Concrete shall be deposited only during the presence of an Inspector and by methods approved by the Owner's Engineer. All concrete shall be placed in the dry. Should water accumulate in any place, the Contractor shall provide and operate sufficient pumps and do whatever else is necessary to remove the water in an approved manner. Ground water shall be prevented from coming into contact with concrete while it is setting.

All steel or metal to be embedded in concrete shall be cleaned of all loose rust, scale, paint, grease or other objectionable material.

Every effort shall be made to avoid formation of laitance, bleeding, and the accumulation of excessive water on the surface of the concrete as it is deposited. Any laitance which may have accumulated in previous deposits shall be removed by picking with a hammer, and the surfaces shall be thoroughly clean and wet immediately before placing concrete. Concrete shall be handled from the mixer to the place of deposit as rapidly as practicable and by methods which will preclude segregation. Concrete shall be deposited in the forms as nearly as practicable in its final position in order to minimize the necessity of rehandling, and it shall be placed in approximately horizontal layers. It shall be thoroughly compacted by means of rodding, spading and/or mechanically vibrating the concrete. It shall be thoroughly worked around the embedded materials and into the corners and spaces to be filled.

Depositing of concrete will be permitted in freezing weather, provided that the concrete shall have a temperature of not less than sixty (60) degrees F. or more than eighty (80) degrees F., that no concrete shall be placed on or next to frozen surfaces, and that means shall be employed to keep con-

crete from becoming frozen. Suitable means shall be provided for maintaining a temperature in the concrete of at least fifty (50) degrees F. for not less than seven (7) days after the concrete is placed. The method of heating the materials and protecting the concrete shall be as approved by the Owner's Engineer. No salt, chemical or admixture of any kind shall be added to the concrete to prevent damage from freezing.

Remixing or placing concrete or mortar which has partially hardened (set) will not be permitted under any circumstances. Before depositing fresh concrete against concrete previously placed and which has hardened, the surface of the concrete shall be thoroughly cleaned and all laitance removed. In addition, vertical joints shall be thoroughly wetted, but not saturated, immediately before placing new concrete.

All beam concrete shall be poured monolithic with the adjacent slab, that is, poured continuously from the bottom of the beam to the top of the slab.

At least twenty-four (24) hours must elapse after depositing concrete in the columns or walls before depositing in beams, girders, walls, or slabs supported thereon. Beams, girders, brackets and haunches shall be considered as part of the floor system and shall be placed integrally therewith.

Conduits when embedded in concrete shall be placed between the top and bottom steel and between the planes of all front and back vertical steel reinforcement and so located as not to reduce the strength of the construction. Conduits shall not be spaced closer than three (3) diameters on centers.

8. Forms

Forms shall conform accurately to the shape, lines and dimensions of the concrete called for on the Drawings; they shall be, regardless of the finish to be obtained, substantially built and sufficiently tight to prevent leakage of water and grout; and shall be properly and securely braced so as to maintain their true position and form. Approved steel forms may be used. Wooden forms shall be of dressed boards, sound and free from loose knots and other defects that may cause undesirable results when the concrete is poured. If required by the Owner's Engineer, the joints shall be tongued and grooved. If any form begins to lose its proper shape, it shall be removed immediately and replaced with a new one. The edges of beams, columns, piers, exposed foundations, etc. shall be chamfered one (1) inch unless otherwise shown on the Drawings, or ordered by the Owner's Engineer. All forms for outside exposed surfaces shall be lined with plywood or any other approved material for like purpose. Jointing of the lining shall be re-

duced to a minimum, and all joints shall be smoothly puttied with approved materials before concrete is poured.

All bolts and ties shall be of approved design. They may be used unless otherwise indicated on the Drawings. They shall be left in the concrete and so connected to the forms that when the forms are removed no metal will be less than two (2) inches from the surface of the concrete.

The inside of all forms shall be thoroughly cleaned before concrete is placed in contact with the form, and shall be coated with a non-staining mineral oil or other approved material applied before reinforcement is placed.

The Owner's Engineer will direct when forms are to be removed and care shall be exercised in removing them not to damage the concrete. Immediately upon the removal of the forms, the surface of the concrete shall be carefully examined and any irregularities of the surface shall be treated as directed by the Owner's Engineer. Merely plastering over of defective surfaces will not be permitted. All concrete surfaces exposed to drying action shall be kept thoroughly and completely wet for at least seven (7) days after pouring of the concrete, and such surfaces as are likely to be injured prior to the complete setting of the concrete shall be kept suitably covered and protected. Approved surface coatings to prevent evaporation may be used where and as approved by the Owner's Engineer.

9. Reinforcing Steel

All reinforcing bars shall be deformed bars of approved type. They shall be bent to conform accurately to the shapes required by the approved working drawings, shall be free from loose rust, scale, paint, grease or other coating of any character which would tend to impair the bond with the concrete when placed, and shall be placed accurately in the form, wired securely at intersections and held in place with approved bars, spacers, chairs, clips, or other supports so that they will not be disturbed during the operation of depositing the concrete.

Welded wire fabric shall conform to the specifications for welded wire fabric for concrete reinforement as manufactured by the American Steel and Wire Company.

10. Concrete Finishes

Concrete surfaces shall have the finish noted on the Drawings or called for herein. Where the finish is not stated "Spade Finish" shall be required.

"Spade Finish" denotes a surface of concrete in which every effort has been made during the concreting operation to bring the fine aggregate of the concrete into close and uniform contact with the forms by the use of proper spading tools, by vibrating the concrete wherever desirable and by hammering the outside of the forms as the concrete is poured. While placing and vibrating the concrete the coarse aggregate shall be worked from the forms into the mass of concrete with fine forks, bars, or other approved tools used between the concrete and the forms. Any holes or voids in the surface of the concrete shall be thoroughly wetted and filled with mortar of the same proportions of the same fine aggregate and cement as in the concrete and rubbed smooth and even with a wooden float. All fins shall be removed by chipping, grinding or any other approved method. Where backfilling against the surface occurs, or where surfaces are otherwise concealed, finishing after removal of forms will not be required, unless called for on the plans or unless dampproofing or other covering is to be applied.

"Smooth Finish" denotes a surface of concrete poured against smooth forms lined with plywood or other acceptable lining material in exactly the same manner as for spade finish. After the removal of the forms, all projecting fins shall be carefully chipped off and any holes filled to present as smooth a finish as possible. The lining of the forms shall be placed with reasonably close fitting square joints between the separate pieces, but shall not be sprung into place so as to cause bowing or warping. Unless permitted otherwise, there shall be no horizontal joints in the lining material for walls and panels of eight (8) feet or less in length. All formed surfaces exposed to view in the finished structure shall have a "Smooth Finish".

"Float Finish" denotes a surface of concrete finished by the use of a wooden float. Care shall be exercised to produce a satisfactory level or slope and smoothness without flushing excessive mortar to the top.

Exposed horizontal concrete surfaces shall have "Float Finish" except floor slabs with topping or as otherwise noted on the Drawings or called for herein.

"Troweled Finish" denotes a surface of concrete finished by the use of a steel float to produce a smooth, even, dense, surface.

11. Concrete Sills - Precast or poured-in-place.

Reinforced concrete sills for the windows of buildings are to be of size and cross-section shown on the Drawings.

The tops of sills shall have a "Troweled Finish" and sides shall have a "Smooth Finish".

Concrete for sills shall consist of approved Portland Cement, fine and coarse aggregates and water, mixed in proportions to produce a "3,000 lb." concrete as specified under "Concrete Mix". The aggregates shall be screened into at least three sizes, the largest not exceeding that which passes a 1/2" diameter ring, and there shall be at least 50% of such size of aggregate that will not pass a 1/8" diameter ring. The various sizes shall be used in such proportions so as to produce maximum density.

12. Grout

Grout shall consist of approved Portland Cement and fine aggregate, mixed in the proportions one (1) part cement and two (2) parts fine aggregate. Sufficient water shall be added to produce a dense workable mix without segregation of constituents.

13. Drypack

Drypack under base plates where called for on the Drawings shall consist of the above specified grout mixed to form a dry, suitable mortar for compacting by hammering and tamping.

14. Dampproofing (Cold Application)

All surfaces shown on the Drawings to be dampproofed shall be brushed free of all dirt or foreign materials and all cracks, voids or open joints shall be properly pointed up with Portland Cement Mortar. The surfaces to be dampproofed shall be uniformly coated with a concrete priming solution using not less than 1-1/4 gallons per 100 square feet. Over the surface thus primed, liquid asphalt shall be uniformly applied in as many coats as specified on the Drawings at the rate of 2 gallons per 100 square feet per coat.

Backfilling shall be delayed until the liquid asphalt has set.

All work shall be done in accordance with the detailed directions issued by the Manufacturer of the primer and liquid asphalt.

If the Contractor elects to use a curing agent in lieu of water curing on those surfaces below grade where dampproofing is to be applied, the curing agent must be compatible with the liquid asphalt dampproofing. In the event that the Contractor uses a curing agent of an asphaltic base, the application of the priming solution prior to dampproofing may be omitted.

15. Admixtures

Sika AER (or approved equal air-entraining admixture) is to be added to the concrete mix in accordance with the manufacturer's recommendations and at such a rate as to produce by test after placing and vibration, an entrained air content within the limits of 3 to 4%.

Sika Plastiment (or approved equal) is to be added to the concrete mix at the rate of 1/2 lb. per bag of cement

SECTION IV

GENERAL CONDITIONS OF THE CONTRACT

Article 1. Definitions and Principles.

(a) The Contract Documents consist of the Instructions to Bidders, Proposal, Agreement, Specifications, and Drawings, including all modifications thereof incorporated in the Contract Documents before their execution, and all are part of the contract.

(b) Written notice shall be deemed to have been duly served upon the Owner if delivered in person or sent by registered mail to the Owner addressed to the attention of Mr. Wilbur Jurden, Chief Engineer, Anaconda Aluminum Company, 25 Broadway, New York 4, N.Y., and upon the Contractor, if delivered in person or sent by registered mail to the Contractor at Contractor's last business address known to the officers of the Owner.

(c) When such words as "approved", "satisfactory", "equal to", "proper", "as directed", and other words indicating standards are used in the Contract Documents, it is understood that, unless otherwise indicated, the Owner's Engineer shall fix the standards.

(d) The term "work" of the Contractor includes labor or materials furnished by the Contractor or both.

(e) All time limits stated in the Contract Documents are of the essence of the contract.

Article 2. Execution, Correlation and Intent of Documents.

The Agreement shall be signed in duplicate by the Owner and Contractor and incorporates by reference all the other Contract Documents.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor, materials as noted elsewhere, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which as so applied have a well-known technical or trade meaning shall be construed in accordance with such meaning.

Article. 3. Detail Drawings and Instructions.

The Owner shall furnish with reasonable promptness,

additional instructions, by means of drawings or otherwise, necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents, true development thereof, and reasonably inferable therefrom.

The work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and instructions.

Article. 4. Copies Furnished.

The Owner will furnish to the Contractor, free of charge, all copies of the Owner's design drawings and specifications necessary for the execution of the work.

Article 5. Drawings and Specifications on the Work.

The Contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the Owner and to his representatives.

Article 6. Ownership of Drawings.

All drawings, specifications and copies thereof furnished by the Owner are his property. They are not to be used on other work and, with the exception of the signed Contract Drawings are to be returned to the Owner on request, at the completion of the work.

Article 7. Materials, Appliances, Services, Employees.

Unless otherwise stipulated, the Contractor shall provide and pay for all labor, tools, materials, equipment, transportation and other facilities necessary for the execution and completion of the work.

The Owner shall furnish all cement, air-entraining and plastiment admixture, primer and liquid asphalt for dampproofing, reinforcing bars, anchor bolts, pipes, pipe sleeves, bolt inserts, conduits, electrical boxes, ferrules, ladder rungs, pieces of structural steel and all other such items to be embedded in the concrete as become a permanent part of the concrete structure.

The Contractor shall furnish all aggregate, bar chairs, spacers, ties, forms and all other material and equipment necessary for the execution and completion of the work.

The Owner shall supply services for concrete testing and control, work and storage areas, and sources for water and electric power supply. Contractor is to provide all facil-

ities from these sources to point of use. Quantities of water and electric power shall be supplied at these sources free of charge.

The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the work any unfit person or any one not skilled in the work assigned to him. Union labor relations shall be subject to approval of the Owner insofar as they may affect his own operations at the Plant-site.

Article 8. Surveys, Permits and Regulations.

The Owner shall furnish all surveys unless otherwise specified. Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Owner. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid by the Owner, unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall bear all costs arising therefrom.

Article 9. Protection of Work and Property.

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with this contract. He shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents.

The Contractor shall take all necessary precautions for the safety of employees on the work, and shall comply with all applicable provisions of Federal, State and Municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protec-

tion of workmen and the public and shall post danger signs warning against the hazards created by such features of construction as protruding nails, scaffolding, ladders, stairways and falling materials; and he shall designate a responsible member of his organization on the work, whose duty shall be the prevention of accidents. The name and position of the person so designated shall be reported to the Owner by the Contractor.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, is hereby permitted to act, at his discretion, to prevent such threatened loss or injury, and he shall so act, without appeal, if so instructed or authorized. Any compensation, claimed by the Contractor on account of emergency work, shall be determined by agreement or arbitration.

Article 10. Inspection of Work.

The Owner and his representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection.

If the Contract Documents, the Owner's instructions, or laws, ordinances or any public authority, require any work to be tested or approved, the Contractor shall give the Owner timely notice that the work is ready for testing and inspection and shall see to its testing and inspection by the proper authorities. If the testing or inspection is by an authority other than the Owner, the Contractor shall notify the Owner of the date fixed for such testing or inspection. Testing or inspection by the Owner shall be promptly made, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Owner, it must, if required by the Owner, be uncovered for examination at the Contractor's expense.

Re-examination of questioned work may be ordered by the Owner and if so ordered the work must be uncovered by the Contractor. If such work be found not in accordance with the Contract Documents the Contractor shall bear the expense of re-examination and replacement.

Article 11. Superintendence: Supervision.

The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner. The superintendent shall not be changed except with the consent of the Owner,

unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. At the request of the Contractor, any such directions given orally will be confirmed in writing.

The Contractor shall give efficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications and other instructions and shall at once report to the Owner any error, inconsistency or omission which he may discover, but he shall not be held responsible for their existence or discovery.

Article 12. Changes in the Work.

The Owner, without invalidating the contract, may make changes by altering, adding to or deducting from the work. All such changes shall be executed under the conditions of the original contract, and payment shall be adjusted on the basis of the contract rates.

In giving instructions, the Owner shall have authority to make changes in the work, not inconsistent with the purposes of the construction, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from the Owner.

Article 13. Claims for Extra Cost.

There shall be no claim for extra cost. The Contractor's unit prices are to be based on his own estimates with proper allowance for contingencies.

Article 14. Damage by Contractor to Work and/or Property.

If the Contractor damages work and/or property he shall promptly replace such work and/or property, or pay for such damage thereto, in each case as the Owner shall require.

Article 15. Delays and Extension of Time.

If the Contractor be delayed at any time in the progress of the work by any act or neglect of the Owner or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, then the time of completion shall be extended for such reasonable time as the Owner may decide.

Article 16. Correction of Work before Final Payment.

The Contractor shall take down and remove all portions of the work condemned by the Owner as failing to conform to the contract and shall promptly replace and re-execute his own work in accordance with the contract and without expense to the Owner and shall bear the expense of making good all work destroyed or damaged by such removal or replacement.

Article 17. Correction of Work After Final Payment.

Neither the final certificate nor final payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility for negligence or faulty work which shall subsequently appear and, upon written notice, he shall remedy within reasonable time any defects due thereto and pay for any damage to other work resulting therefrom. The Owner shall give notice of observed defects with reasonable promptness.

Article 18. The Owner's Right to Do Work.

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this contract, the Owner, after three (3) days written notice to the Contractor, may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payments then or thereafter due the Contractor.

Article 19. Owner's Right to Terminate Contract.

If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment for material or labor, or disregard laws, ordinances or the instructions of the Owner, or otherwise be guilty of a violation of any provision of the contract, then the Owner may, without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the Contract, and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work including compensation for additional managerial and administrative services and payment of all

claims and discharge of all liens, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

Article 20. Contractor's Right to Stop Work or Terminate Contract.

If the work should be stopped under an order of any court, or other public authority, for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by him, or if the Owner should fail to pay to the Contractor within seven (7) days of its maturity and presentation, any sum certified by the Owner or awarded by arbitrators then the Contractor may, upon seven (7) days written notice to the Owner, stop work or terminate this contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit.

Article 21. Requisitions for Payments.

Payments are to be made for the work done in each month on such day of the following month as the Owner and the Contractor shall agree upon. Payment shall be based on valuation of work done. The Contractor shall submit to the Owner's Engineer a requisition for each payment (and, if required, receipts or other vouchers) at least ten (10) days before such payment falls due.

Payments shall be made for those quantities measured by the Contractor and certified by the Owner's Engineer except that ten per cent (10%) of all payments shall be withheld as outlined in Section IV, Article 29.

Article 22. Certificates of Payments.

If the Contractor has made requisition as above, the Owner's Engineer shall, not later than the date when each payment falls due, issue to the Contractor a certificate for such amount as he decides to be properly due.

No certificate issued nor payment made to the Contractor, nor partial or entire use or occupancy of the work by the Owner, shall be an acceptance of any work not in accordance with this contract. The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work or from requirements of the specifications, and of all claims by the Contractor, except those previously made and still unsettled.

Should the Owner fail to pay the sum named in any certificate of the Owner's Engineer or in any award by arbitration, upon demand when due, the Contractor shall receive, in addition to the sum named in the certificate, interest thereon at the legal rate in force at the place of building.

Article 23. Payments Withheld.

The Owner's Engineer may withhold, or, on account of subsequently discovered evidence, nullify, the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

(a) Defective work not remedied.
(b) Claims filed or reasonable evidence indicating probable filing of claims.
(c) A reasonable doubt that the contract can be completed for the balance then unpaid.

When the above grounds are removed payment shall be made for amounts withheld because of them.

Article 24. Contractors Liability Insurance.

Contractor agrees to provide and keep in force during the tenure of this agreement, in one or more insurance companies satisfactory to the Owner, the following insurance, for the protection of the Contractor:

(a) Statutory Workmen's Compensation Insurance for all of its employees. Such insurance will cover claims filed under the Workmen's Compensation Law of this State, or of the State in which said work is to be performed, or any law of any State under which liability for any such claims shall arise;

(b) Employer's Liability Insurance to cover claims based on Common Law filed by the Contractor's employees for traumatic injuries as well as occupational diseases;

(c) Comprehensive General Liability Insurance covering both Bodily Injury and Property Damage.

(d) Comprehensive Automobile Liability Insurance covering both Bodily Injury and Property Damage.

Certificates of such insurance shall be filed with the Owner and shall be subject to his approval for adequacy of protection.

Article 25. Owner's Liability Insurance.

Deleted.

Article 26. Fire Insurance.

The Owner shall during the progress of and until the completion of the work maintain insurance on all structures, materials, supplies and equipment at the site of the work against loss or damage by fire, lightning, sprinkler leakage, vandalism, malicious mischief and the perils insured against under the so called Extended Coverage endorsement. This insurance shall be arranged by the Owner in the names of the Owner and the Contractor to cover loss to either as their interests may appear.

Article 27. Security for Faithful Performance.

Upon signing the Agreement, the Contractor agrees to give bond covering the faithful performance of the contract and the payment of all obligations arising thereunder in an amount equal to one hundred per cent (100%) of the contract price, determined on the basis of the estimates in his proposal, in such form as the Owner may prescribe and with such sureties as the Owner may approve, and the Contractor shall pay the premium therefor.

Article 28. Damages.

If either party to this contract should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone employed by him, then he shall be reimbursed by the other party for such damage.

Claims under this clause shall be made in writing to the party liable within a reasonable time at the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work and shall be adjusted by agreement or arbitration.

Article 29. Liens.

Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete release of all liens and claims arising out of this contract, or, if satisfactory to the Owner, receipts in full in lieu thereof and, if required in either case, an affidavit that the releases and receipts include all the labor, material and equipment for which a lien could be filed; but the Contractor may furnish a bond satisfactory to the Owner, to indemnify him against any lien or claim. If any lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien or claim including all costs and reasonable attorney's fees.

Article 30. Assignment.

Neither party to the contract shall assign the contract without the written consent of the other, nor shall the Contractor subcontract the work, or any part thereof, or assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner.

Article 31. Sequence of Work.

Pouring of concrete for support of structural steel shall be advanced as rapidly as possible in coordination with other concrete work in order that there shall be no delay in erection of the structural steel upon delivery. Schedule of all work shall be established to the mutual satisfaction of the Contractor and Owner's representatives, except as specifically noted under Section I.

Article 32. Coordination and Cooperation.

The Contractor shall cooperate with other contractors in permitting their performance of work and coordinate his operations so as not to cause any undue delay.

Article 33. Owner's Engineer's Status.

The Owner's Engineer shall be such person as the Owner may from time to time designate as such. Notice of each such designation shall be given to the Contractor. The Owner's Engineer shall have general supervision and direction of the work. He is the agent of the Owner only to the extent provided in the Contract Documents and when in special instances he is authorized by the Owner so to act, and in such instances he shall, upon request, show the Contractor written authority. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the contract.

Article 34. Arbitration.

Any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be settled by arbitration in accordance with the Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrators may be entered in any Court having jurisdiction thereof.

The Contractor shall not cause a delay of the work during any arbitration proceeding, except by agreement with the Owner.

Article 35. Use of Premises.

The Contractor shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Owner's Engineer and shall not unreasonably encumber the premises with his equipment.

The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.

The Contractor shall enforce the instructions of the Owner's Engineer regarding signs, advertisements, fire and smoking.

Article 36. Cutting, Patching and Digging.

The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon, or reasonably implied by, the Drawings and Specifications for the completed structure.

Article 37. Cleaning Up.

The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish from and about the premises and all his tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified. In case of dispute the Owner may remove the rubbish and charge the cost to the Contractor.

All surplus materials are the property of the Owner and are to be removed from the premises by the Contractor as instructed by the Owner's Engineer.

SECTION V

SCOPE OF WORK

ARTICLE 1. DRAWINGS

The drawings included with this invitation to bid and referred to primarily in this section of the contract documents as well as elsewhere in the documents, are for the bidders information only as to general type or class of work involved and show the extent of the excavation, backfilling and concrete work to be performed under this contract.

There are three classifications of drawings included:- those drawing numbers prefixed with the letters AA, AB, AC, etc are being developed in accordance with the appropriation numbers set up for the aluminum plant - ultimately all drawings issued for construction purposes will be in this classification. Where no drawings have as yet been developed for this project, certain "foreign" prints are included to show the general type or class of work involved for a similar structure at another plant; certain drawing numbers are prefixed with the letters PR indicating "preliminary" and are used in conjunction with other two foregoing classifications.

The drawings are unchecked drawings. After the contract is awarded, checked and approved drawings of these and other drawings to follow will be issued to the Contractor. Immediately after the contract is awarded, the Owner proposes to furnish checked and approved working drawings for construction purposes for the units outlined in Section I on page 5, plus the drawings covering the pot-line building foundations. Thereafter, the Owner will furnish the remaining drawings as rapidly as they can be completed in such a manner so as not to impede the work of the Contractor.

The following drawings show the layout of the proposed aluminum plant:

PR-52	Aluminum Reduction Plant Plant Layout "J"
PR-53	Aluminum Reduction Plant Location Plan of Plant on Property for Plant Layout "J"
AU-1	General Plant Perspective Showing Appropriation Numbers

ARTICLE 2. WORK INCLUDED IN CONTRACT

A. General Yard Excavation

The Contractor's work includes the excavation and placing of fill for the finished yard levels within the limits as indicated on the following drawing:

PR-71 Aluminum Reduction Plant
General Excavation Plan

B. Neat Excavation and Concrete

The concrete work includes footings, walls, retaining walls, grade beams, tunnels, columns, yardpaving, slabs, stairs, curb and equipment foundations. The Contractor shall cut, bend and place all reinforcing steel and in addition his work will include the placing of all embedded materials, whether embedded in concrete or earth, in such a manner that the embedded materials (or ends of material in the case of piping and conduit) shall be accessible after the concrete and earthwork operations of this contract are completed or presumed to be completed at any given time prior to actual completion. These embedded materials will include anchor bolts, piping, pipe sleeves, bolts, inserts, conduit, conduit sleeves, electrical boxes, ferrules, ladder rungs, pieces of structural steel, etc.

In addition, the concrete work will include the application below grade of primer and liquid asphalt for dampproofing the exterior concrete surfaces of basements, vaults, rooms, tunnels, trenches and any other cellular type structure whose exterior surfaces are in contact with earth, the underside of foundation slabs excepted.

Referring to Drawing Nos. PR-52 and PR-53 showing the general plant layout, the Contractor's work includes all neat excavation for, the placing of all concrete as outlined in the preceding paragraphs for, and the placing of all fills and backfill around, and within if required, the following structural units and equipment, except as modified under Article 3 of this Section:

(a) General Office Gate House and Garage as shown on the following drawings:

AE-3 Office - Architectural Plan
Room and Door Schedules

(a) General Office Gate House and Garage (cont'd)

AE-4 Office - Architectural Elevations

PR-73 Office - Reinforced Concrete Plans & Sections

(b) Change House
as shown on the following drawings:

AE-8 Change House - Architectural Plan and Sections

AE-10 Change House Architectural Elevations

AE-15 Change House - Concrete Masonry Foundation Details - Sheet 1 of 2

AE-16 Change House - Concrete Masonry Foundation Details - Sheet 2 of 2

AE-17 Change House - Reinforced Concrete Wall Details

AE-18 Change House - Reinforced Concrete Miscellaneous Roof Slabs

AE-20 Change House - Reinforced Concrete Floor Slab

(c) Laboratory
as shown on the following drawings:

AE-1 Laboratory- Architectural Plan Room & Door Schedules

AE-2 Laboratory Architectural Elevations

AE-50 Laboratory- Concrete Masonry Foundation Details

AE-51 Laboratory- Concrete Masonry Basement Details

(d) Warehouse
as shown on the following drawings:

AE-6 Warehouse
Architectural Floor Plans

AE-7 Warehouse
Architectural Elevations

AE-35 Warehouse- Reinforced Concrete
Plan of Walls & Footings

AE-36 Warehouse- Reinforced Concrete
Details of Walls & Footings-
Col. Line A

AE-37 Warehouse- Reinforced Concrete
Details of Walls & Footings -
Col. Line E

AE-38 Warehouse- Reinforced Concrete-
Details of Walls & Footings-
Col. Lines 1 & 20

AE-39 Warehouse- Reinforced Concrete
Details of Walls & Footings -
Col. Lines 18 & 19

AE-40 Warehouse- Reinforced Concrete
Details of Walls & Footings-
Col. Lines 6 & C

AE-41 Warehouse- Reinforced Concrete
Floor Slab Details -

(e) Maintenance Shop
as shown on the following drawings:

PR-76 Maintenance Shop- General Arrangement
Plan & Sections

AE-43 Maintenance Shop- Reinforced Concrete
Plan of Walls & Footings

AE-44 Maintenance Shop- Reinforced Concrete
Details of Walls & Footings -
Col. Line A

(e) Maintenance Shop (cont'd)

AE-45 Maintenance Shop- Reinforced Concrete Details of Walls & Footings - Col. Lines 1 & B

AE-46 Maintenance Shop- Reinforced Concrete Details of Walls & Footings- Col. Line C

(f) Pot Lines
as shown on the following drawings:

PR-66 Pot Lines- Concrete Masonry Building Foundation Plan

PR-67 Pot Lines- Concrete Masonry Building Foundation Details

PR-72 Pot Line Buildings - Ventilation- Roof Ventilators Building Specification

(g) Pin Repair Shop
No drawings included at this time - work in general comprises equipment and building foundations housed in a building about 30' wide by 250' long.

(h) Paste Plant Including Conveyor Tunnels to Paste Silos
as shown on the following drawing:

PR-74 Paste Plant- Reinforced Concrete Plan & Details

(i) Pitch Storage Tanks, including Pump House
No drawings included at this time - in general work comprises equipment, tank and pump house foundations.

(j) Boiler and Compressor House
No drawings included at this time - in general work comprises equipment and building foundations. Function of this unit is to produce steam only for plant heating requirements and

(j) Boiler and Compressor House (cont'd)
compressed air for operational purposes. Equipment foundations will include that required for "package-type" oil fired boilers, compressors and drives, stacks and other conventional equipment apropos to boiler houses.

(k) Fuel Oil Storage Tanks, including Pump House
Component parts of the proposed installation will be similar to installation shown on following Chile Exploration Company drawings except as noted below:

SU-7 Fuel Oil Supply & Distribution-
Service Pump House-
Reinforced Concrete- Foundation

SU-8 Fuel Oil Supply & Distribution-
Transfer Pump House
Reinforced Concrete- Foundation

SU-9 Fuel Oil Supply & Distribution-
Fuel Oil Service Tanks
Concrete Foundations

SU-36 Fuel Oil Supply & Distribution
Storage Tanks
Foundations- Reinforcing Steel

Note: The above drawings are typical for a large installation. The aluminum plant will differ in that only 2 service tanks about 7'ø x 12' long and only 3 - 36' diameter fuel oil storage tanks will be required. In addition, it is quite probable that fuel oil distribution pipe lines which otherwise would be under paved surfaces will be installed in concrete trenches with removable precast concrete covers. The extent of these trenches is as yet undetermined.

(l) Rectifier Substation Building
as shown on the following drawings:

PR-77 Rectifier Substation- Reinf. Conc.
Plans & Sections

PR-61 Electric Power- Proposed Plans
for Rectifier Substation- Typical

(l) Rectifier Substation Building (cont'd)

PR-62 Electric Power-
Proposed Cross Section
Through Rectifier Substation

PR-63 Electric Rectifier Substation
Sections of Proposed Bus &
Equipment Layout

(m) Outdoor 230 KV & 13.8 KV Substations as shown on the following drawings:

AD-13 Electric Power- Plan of 230 KV
Loop Station- 230/13.8 KV Trans-
former & Switching Station

AD-14 Electric Power- Sections of 230 KV
Loop Station- 230/13.8 KV Trans-
former & Switching Station

(n) Truck and Railroad Scales and Scale Houses
Accompanying Yerington Mine truck scale installation as shown on the following drawings is typical for the truck scale as well as the railroad scale pits proposed for the aluminum plant:

YJ-89 Truck Scale- Concrete Masonry
Scale Pit and Scale House-
General Arrangement

YJ-90 Truck Scale- Reinforced Concrete
Scale Pit & Scale House-
Sheet 1 of 2

YJ-91 Truck Scale- Reinforced Concrete
Scale Pit & Scale House
Sheet 2 of 2

(o) Bath Salvage Plant
No drawings included at this time - the work comprises equipment and building foundations for a structure about 90 feet wide by 300 feet long with basement at same depth as for pot-line buildings.

(p) Casting & Siphon Maintenance Building
No drawings included at this time - the work comprises equipment and building foundations for a structure about 90 feet wide by 650 feet long.

(q) Electric Shop & Untanking Tower
as shown on the following drawing:

PR-78 Electric Shop & Untanking Tower
Reinforced Concrete- Plan & Sections

(r) Truck Garage and Repair Shop
Accompanying Yerington Mine drawings show a garage installation which is similar to that proposed for the aluminum plant except as noted below:

PR-38 Garage- General Arrangement
Plan & Sections

YJ-47 Garage- Concrete Masonry &
Reinf. Details- Sheet 1 of 2

YJ-48 Garage- Concrete Masonry &
Reinf. Details- Sheet 2 of 2

Note: The installation proposed for the aluminum plant will be about the same width but only about one half as long.

(s) Paving and Retaining Walls
as shown on the following drawing:

PR-75 Electrical Distribution Tunnels
Yard Paving & Retaining Walls
General Arrangement

Note: Yard Paving not included. See Article 3.-I page 36.

(t) Domestic Sewage Disposal Plant
No drawings included at this time - work comprises sewage disposal plant for the aluminum plant only (no housing development) including main treatment units, pump house and appurtenances.

(u) Industrial Waste Disposal Plant
Largest unit required for the waste disposal plant is the thickener tank. Accompanying Chile Exploration Company drawings are similar to that proposed for the aluminum plant, except as noted below:

SS-123 Concentrator- 130' Dia. Thickener
Tanks - General Arrangement

SS-187 Concentrator- 130' Dia. Thickener
Tanks- Center Piers for Tanks
C-1 & C-3 - Details

(u) Industrial Waste Disposal Plant (cont'd)

SS-198 Concentrator- 130' Dia. Thickener Tanks- Spigot Tunnels - Concrete Details -

SS-512 Concentrator- 130' Dia. Thickener Tanks- Plan & Section of Tank - Floor Slab Details -

SS-513 Concentrator- 130' Dia. Thickener Tanks- Tank Walls- Typical Details-

Note: Whereas the above drawings show a three tank installation, the aluminum plant will require a single 125' diameter tank. In addition to the tank the work will also include a pump house and equipment foundations for the slaker and contactor. The settling ponds which are part of this waste disposal plant will probably require neat excavation only as it is proposed to leave these unlined.

(v) Water Supply Head Tanks
No drawings included at this time - the work comprises providing foundations for steel water supply head tanks and a pump house. Because of freezing conditions, the Owner may resort to the use of underground concrete head tanks in conjunction with a pump house.

(w) Miscellaneous Structures
No drawings are included at this time but the Owner desires to include miscellaneous small outdoor installations, such as local substations, the miscellaneous equipment foundations between the pot-line buildings, and anything else that is in keeping with the class of work outlined herein that will prove necessary as the plans and details are more fully developed.

ARTICLE 3. WORK EXCLUDED FROM CONTRACT

A. Alumina Unloading Station

B. Alumina Storage Silos

C. Building housing Track and Box Car Hoppers

D. Coke Silos

ARTICLE 3. WORK EXCLUDED FROM CONTRACT (cont'd)

E. Anthracite Silo

F. Metallurgical Coke Silo

G. Chemical Silos

H. Exterior and interior brick wall masonry

I. Yard Paving

ARTICLE 4. CONTRACTOR'S EQUIPMENT

A. The Contractor shall provide for his own use such facilities for the proper performance of the Contract as:

(a) Fine and coarse aggregate plant with provision for crushing, screening and washing as may be required.

(b) Batching plant including weather-tight silo or equivalent for cement storage of capacity consistent with his scheduled rate of pouring concrete.

(c) Repair Shop facilities for general repair work of his equipment, etc.

(d) Equipment for field bending of reinforcing steel.

(e) Equipment for earthwork operations.

(f) Equipment for handling and placing of all concrete.

(g) Pumping Facilities as required to meet any contingency even though borings indicate water table 90' below ground surface.

List of Supplemental Drawings furnished to further clarify the Scope of Work under this contract. These drawings were furnished on May 15, 1953 to Mr. J. A. McNeil, President
J. A. McNeil Company

AC-50	Pot Lines- Concrete Masonry Operating Floor Plan - Sheet 1 of 2
AC-51	Pot Lines- Concrete Masonry Operating Floor Plan - Sheet 2 of 2
AC-53	Pot Lines- Concrete Masonry Typical Pot Foundation & Operating Floor
AC-62	Pot Line Buildings- Ventilation Typical Cross Section
AD-266	Power Distribution- Electrical Tunnels- Floor Drainage System- General Arrangement-
AE-79	Change House- Plumbing Soil & Drainage Piping - Plan & Details
AE-84	Office - Plumbing Soil & Drainage Piping - Plan & B/M
AE-85	Office - Plumbing Soil & Drainage Piping- Sections & Details
AE-86	Shop Building- Maintenance Shop Plumbing - Soil & Drainage Piping
AS-1	Rectifier Substation Typical Cross Section & Plans

ARTICLE 5. ENGINEER'S ESTIMATE

It is estimated, that those structures in Article 2. of this Section for which no drawings have been furnished, will involve about 25,000 cubic yards of neat excavation and about 10,000 cubic yards of concrete.

It is estimated that the overall work including the above, consists of about 450,000 cubic yards of neat and yard excavation and about 75,000 cubic yards of concrete. No guarantee is given that these overall quantities are correct.

The Contractor is to make his own estimate, based on the data accompanying this invitation to bid, making proper allowances for contingencies, and base his overall unit prices thereon.

SECTION VI

BASIS FOR PAYMENT

ARTICLE 1. GENERAL YARD EXCAVATION

Quantities of excavated materials for payment purposes shall be measured in their original positions between the established yard level elevations and the existing ground surface within the plan limits as shown on General Plant Yard Excavation Drawing.

ARTICLE 2. NEAT EXCAVATION

Quantities of excavated materials for payment purposes shall be measured in their original positions within the vertical planes established by the outside lines of the foundations and between the bottom of the foundations and established yard levels or existing ground surface, whichever is lower. No payment shall be made for excavation extended below the intended depths as shown on the working drawings unless ordered or approved by the Owner's Engineer.

ARTICLE 3. BACKFILL

The overall unit price for excavation will include all backfilling costs incidental to placing backfill at the local structures or in the establishment of yard levels higher than the existing ground surface. Hence, no payments will be made for backfilling.

ARTICLE 4. CONCRETE

Quantities of concrete for payment purposes shall be actual volume, measured in place. The overall unit price for a cubic yard of concrete in place shall include all considerations as materials, labor, placing of embedded material, dampproofing, subsistence, temporary structures, equipment, plant, taxes, all premiums for bonds and insurance, profit and all other costs to the Contractor. Deductions in volume will not be made for conduits, pipe sleeves and other embedded parts. If lean concrete (2000 lbs./sq.in.) is required, payment for same will be as for structural concrete.

No payment will be made for either structural grade or lean concrete required in connection with over-excavation beyond the intended limits as shown on the drawings or as approved by the Owner's Engineer.

ARTICLE 5. GRAVEL

Quantities of gravel used in connection with french drains, under floor slabs, etc. will be paid for actual volume used.